

# Laucks <sup>82</sup> years

## Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

FILE

Raphael  
1-15-90

## Certificate

Chemistry, Microbiology, and Technical Services

CLIENT: Alaskan Copper Works  
P.O. Box 3546  
Seattle, WA 98124  
ATTN: Raphael Acholonu

LABORATORY NO. 19534

DATE: Jan. 9, 1990

PO #M12615

REPORT ON: DIRT

SAMPLE IDENTIFICATION: Submitted 11/27/89 and identified as shown:

Acidyard construction dug out dirt 3200 11-27-3200-M12615

The 96 hour static fish bioassay was performed in accordance with Washington State Department of Ecology methods, with results as shown below.

### 96 HOUR STATIC FISH BIOASSAY

#### Description of Waste

Acidyard construction dug out dirt 3200 11-27-3200-M12615

#### Description of Test Set Up

The test was performed in triplicate at concentrations of 1000 ppm, 100 ppm, and 0 ppm in glass aquaria (8" x 10" x 14") containing 30 liters of tap water with a hardness of about 110 mg/L. Light was provided with fluorescent lamps for 18 hours per day. All test and control aquaria contained 10 organisms. The tanks were aerated during the first 24 hours of the test period only. The test was started on 12/4/89. The waste was added to the tanks directly.

#### Test Organism Information:

Species:	Pimephales promelas (fathead minnow)
Mean Weight:	0.62 grams
Mean Length:	4.2 cm
Longest:	4.8 cm
Shortest:	3.9 cm
Ratio (long/short):	1.2
Ratio of flesh to water:	0.21 grams/L
Source of test organisms:	Kurtz Fish Hatchery
Diseases observed:	None
Food used:	Wardley's dry flake food for large cichlids
History:	Fish were acclimated at least 2 weeks prior to test



This report is submitted for the exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any member of its staff in connection with the advertising or sale of any product or process will be granted only on contract. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

AKC-0014768



## Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

## Certificate

Chemistry, Microbiology, and Technical Services

PAGE NO. 2

Alaskan Copper Works

LABORATORY NO. 19534

### Observations of Effects or Symptoms:

None

### Mortalities Observed in 30 test organisms:

	<u>Mortalities</u>	<u>%</u>
1000 parts per million	6	20
100 parts per million	3	10
control	3	10

### Water Chemistry Results: (mean +/- standard deviation)

	<u>1000 ppm</u>	<u>100 ppm</u>	<u>control</u>
Dissolved Oxygen, mg/L	7.2 ± 0.44	7.0 ± 0.59	7.2 ± 0.50
pH	6.4 ± 0.19	6.4 ± 0.16	6.2 ± 0.07
Temperature, degrees C	22. ± 0.00	22. ± 0.0	22. ± 0.0
Hardness, mg/L	128. ± 0.00	129. ± 1.0	129. ± 1.1
Alkalinity, mg/L	23. ± 16.0	33. ± 1.0	34. ± 0.0
Conductivity, micromhos/cm	268. ± 20.	294. ± 16.	293. ± 11.

### Conclusions

Based on an evaluation of test mortalities (corrected for control mortality), this waste would be classified as undesignated waste.



This report is submitted for the exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any member of its staff in connection with the advertising or sale of any product or process will be granted only on contract. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.

AKC-0014769

Chemistry, Microbiology and Technical Services

PAGE NO. 3

Alaskan Copper Works

LABORATORY NO. 19534

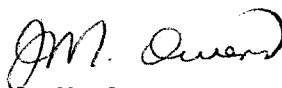
### Water Chemistry Test Methods

Dissolved Oxygen	SM*, part 421B
pH	SM, part 423
Total Hardness	SM, part 314B
Total Alkalinity	SM, part 403
Specific Conductance	SM, part 205

\*SM = Standard Methods, 15th edition

Respectfully submitted,

Laucks Testing Laboratories, Inc.

  
J. M. Owens

JMO:veg



This report is submitted for the exclusive use of the person, partnership, or corporation to whom it is addressed. Subsequent use of the name of this company or any member of its staff in connection with the advertising or sale of any product or process will be granted only on contract. This company accepts no responsibility except for the due performance of inspection and/or analysis in good faith and according to the rules of the trade and of science.